REMARKS

Claims 1, 3-18, and 20-31 are pending in this application. Claims 1, 7-10, 13-15, 18, 21, 22, and 25-29 have been amended. Support for the claim amendments can be found in the originally filed specification and drawings. No new matter has been added. Favorable reconsideration and allowance of the pending claims are requested.

Objection to the Drawings

Applicants submit that the Replacement Sheet included with this Amendment and Response addresses and overcomes the objections to the drawings set forth in the Office Action. Accordingly, Applicants respectfully request reconsideration and withdrawal of the objection to the drawings.

Claim Rejections – 35 U.S.C. § 112, Second Paragraph

Applicants submit the foregoing claim amendments address and overcome the indefiniteness rejection set forth in the Office Action. Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 112, second paragraph, rejection of claims 1, 3-18, and 20-31.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 1, 4-10, and 12-14

Claims 1, 4-10, and 12-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over "The IceCube approach to the reconciliation of divergent replicas," ACM 2001, pages 210-218 to Druschel et al. ("Druschel") in view of United States Patent Number (USPN) 5,963,911 to Walker et al. ("Walker"). Applicants respectfully traverse this rejection.

While Applicants disagree with the grounds of rejection set forth in the Office Action, independent claim 1 has been further amended in order to expedite prosecution.

Applicants submit that Druschel and Walker, whether taken alone or in combination, fail to teach or suggest all of the features recited in amended independent claim 1. For example, neither Druschel nor Walker teaches or suggests at least an

interface function that, when called, determines a pair-wise probability that the task represented by another task container will influence the task represented by the called task container based on a current schedule state of scheduled tasks, selection criteria specified in resource containers of the another task container, and selection criteria specified in resource containers of the called task container.

Druschel and Walker also fail to teach or suggest generating a total cost for each task based on pair-wise costs for each task calculated from determined pair-wise probabilities that the task will influence each other task in the plurality of task containers; and scheduling the task with the least total cost.

When addressing independent claim 1, the Office Action relies on portions of Druschel related to an approach to log-based reconciliation that compares every pair of actions to build static constraints between all pairs of actions and then proposes schedules that satisfy the static constraints. As described in Druschel, the static constraints can be evaluated without reference to the state of the object universe and depend on (i) the order of the logs, (ii) the identity of the target objects, and (iii) the order method. According to the teachings of Druschel, if the actions' targets differ, they are assumed independent and communicative. If the actions come from different logs, the actions are constrained according to the return value of each common target's order method. If both actions are from the same log, the order in which they appear in the log is safe; the reverse order is constrained by order.

While Druschel mentions that pairs of actions are compared, there is no teaching or suggestion in Druschel of determining a pair-wise probability that one action will influence another action. In particular, the order method described in Druschel returns safe, maybe, or unsafe to signify that according to semantics, ordering one action before another is respectively allowed, possible (modulo dynamic conflicts), or disallowed. Further, Druschel clearly states that the scheduling of actions depends on the value of a parameter *H*, which controls the heuristic used to limit the size of the search space. Applicants submit, therefore, that the scheduling described in Druschel is heuristic rather than probabilistic.

In view of the above, Applicants submit that Walker clearly does not disclose a pair-wise probability as recited amended independent claim 1 and that there is no

teaching or suggestion in Walker of a pair-wise probability that the task represented by another task container will influence the task represented by the called task container based on a current schedule state of scheduled tasks, selection criteria specified in resource containers of the another task container, and selection criteria specified in resource containers of the called task container. Accordingly, Druschel fails to teach or suggest all of the features recited by amended independent claim 1.

Moreover, as correctly noted in the Office Action, Druschel fails to disclose an interface function, generating a cost for each task based on probabilities that the task will influence each other task in the plurality of tasks, and scheduling the task containers with the least cost. When addressing these admitted deficiencies of Druschel, the Office Action relies of portions of Walker related to allocating a plurality of resources to a plurality of jobs.

As described in Walker, the allocating of resources involves assigning an available resource to a job which is associated with it with the smallest cost combination that produces the smallest total projected cost. While Walker mentions that the cost of allocating a given job to a given resource (e.g., a technician) is estimated taking into account certain probabilities such as the probability of the job failing and the probability of completion, such probabilities vary from one technician to another and represent the ability or inability of a resource to complete a task.

In view of the above, Applicants submit that the probabilities described in Walker clearly do not comprise a pair-wise probability as recited amended independent claim 1 and that there is no teaching or suggestion in Walker of a pair-wise probability that the task represented by another task container will influence the task represented by the called task container based on a current schedule state of scheduled tasks, selection criteria specified in resource containers of the another task container, and selection criteria specified in resource containers of the called task container. There is also no teaching or suggestion in Walker of generating a total cost for each task based on pair-wise costs for each task calculated from determined pair-wise probabilities that the task will influence each other task in the plurality of task containers, as recited by amended independent claim 1. Accordingly, Walker fails to remedy the deficiencies of Druschel with respect to the features recited by amended independent claim 1.

Applicants submit that none of the applied references, including Druschel and Walker, teaches or suggests all of the features recited by amended independent claim 1. Consequently, even if such references could be combined, which Applicants do not admit, such combination would not teach or suggest all of the features of amended independent claim 1. Further, there is no teaching, suggestion, or motivation to modify Druschel and/or Walker to include all of the recited features of amended independent claim 1. In particular, modification of either Druschel or Walker to include all the recited features of amended independent claim 1 would be contrary to the explicit teachings and principles of operation of such references. Therefore, Applicants submit that Druschel and Walker, whether taken alone or in combination with each other, are insufficient to establish obviousness under § 103(a) with respect to amended independent claim 1.

For at least the foregoing reasons, Applicants submit that amended independent claim 1 is allowable and that dependent claims 4-10 and 12-14 are allowable by virtue of their dependency from an allowable claim, as well as on their own merits.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 103(a) rejection of claims 1, 4-10, and 12-14.

Claims 3 and 11

Claims 3 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Druschel in view of Walker and further in view of WO 01/84301 A2 to Sankaranarayan et al. ("Sankaranarayan"). Applicants respectfully traverse this rejection.

As mentioned above, Druschel and Walker fail to teach or suggest all the recited features of amended independent claim 1, whether taken alone or in combination with each other. Applicants submit that Sankaranarayan fails to remedy the deficiencies of Druschel and Walker with respect to the features recited by amended independent claim 1. For example, Sankaranarayan fails to teach or suggest at least an interface function that, when called, determines a pair-wise probability that the task represented by another task container will influence the task represented by the called task container based on a current schedule state of scheduled tasks, selection criteria specified in resource containers of the another task container, and selection criteria specified in resource containers of the called task container.

Sankaranarayan also fail to teach or suggest generating a total cost for each task based on pair-wise costs for each task calculated from determined pair-wise probabilities that the task will influence each other task in the plurality of task containers; and scheduling the task with the least total cost.

Applicants submit that none of the applied references, including Druschel, Walker and Sankaranarayan, teaches or suggests all of the features recited by amended independent claim 1. Consequently, even if such references could be combined, which Applicants do not admit, such combination would not teach or suggest all of the features of amended independent claim 1. Further, there is no teaching, suggestion, or motivation to modify Druschel, Walker, and/or Sankaranarayan to include all of the recited features of amended independent claim 1. Therefore, Applicants submit that Druschel, Walker, and Sankaranarayan, whether taken alone or in combination with each other, are insufficient to establish obviousness under § 103(a) with respect to amended independent claim 1.

For at least the foregoing reasons, Applicants submit that amended independent claim 1 is allowable and that dependent claims 3 and 11 are allowable by virtue of their dependency from an allowable claim, as well as on their own merits.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 103(a) rejection of claims 3 and 11.

Claims 15-17

Claims 15-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sankaranarayan in view of Walker. Applicants respectfully traverse this rejection.

While Applicants disagree with the grounds of rejection set forth in the Office Action, independent claim 15 has been further amended in order to expedite prosecution.

For reasons similar, but not identical to those discussed above, Applicants submit that Sankaranarayan and Walker, whether taken alone or in combination, fail to teach or suggest all of the features recited in amended independent claim 15. For example, neither Sankaranarayan nor Walker teaches or suggests at least querying a task container to determine a pair-wise probability that the first candidate task will influence the second candidate task based on the first resources, the second resource, and the selection criteria;

calculating a pair-wise cost of scheduling the first candidate task based on the determined pair-wise probability; and scheduling one or more of the first candidate task and the second candidate task based on the pair-wise cost.

Even if such references could be combined, which Applicants do not admit, such combination would not teach or suggest all of the features of amended independent claim 15. Further, there is no teaching, suggestion, or motivation to modify Sankaranarayan and/or Walker to include all of the recited features of amended independent claim 15. Therefore, Applicants submit that Sankaranarayan and Walker, whether taken alone or in combination with each other, are insufficient to establish obviousness under § 103(a) with respect to amended independent claim 15.

For at least the foregoing reasons, Applicants submit that amended independent claim 15 is allowable and that dependent claims 16 and 17 are allowable by virtue of their dependency from an allowable claim, as well as on their own merits.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 103(a) rejection of claims 15-17.

Claims 18 and 20-25

Claims 18 and 20-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Druschel in view of Sankaranarayan and further in view of Walker. Applicants respectfully traverse this rejection.

While Applicants disagree with the grounds of rejection set forth in the Office Action, independent claim 18 has been further amended in order to expedite prosecution. For reasons similar, but not identical to those discussed above, Applicants submit that Druschel, Sankaranarayan, and Walker, whether taken alone or in combination, fail to teach or suggest all of the features recited in amended independent claim 18. For example, none of the applied references, including Druschel, Sankaranarayan, and Walker, teaches or suggests an interface function that, when called, determines a pair-wise probability that another task represented by another task object will influence the task represented by said called task object, said determination based on a current schedule state of scheduled tasks, resource selection logic associated with said another task object, and resource selection logic associated with said called task object.

Druschel, Sankaranarayan, and Walker also fail to teach or suggest a cost generator operable to generate a total cost for each of the tasks based on pair-wise costs for each task calculated from determined pair-wise probabilities that each said task will influence each other said task; and a scheduling engine operable to schedule the task with the least total cost.

Even if such references could be combined, which Applicants do not admit, such combination would not teach or suggest all of the features of amended independent claim 18. Further, there is no teaching, suggestion, or motivation to modify Druschel, Sankaranarayan, and/or Walker to include all of the recited features of amended independent claim 18. Therefore, Applicants submit that Druschel, Sankaranarayan, and Walker, whether taken alone or in combination with each other, are insufficient to establish obviousness under § 103(a) with respect to amended independent claim 18.

For at least the foregoing reasons, Applicants submit that amended independent claim 18 is allowable and that dependent claims 20-25 are allowable by virtue of their dependency from an allowable claim, as well as on their own merits.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 103(a) rejection of claims 18 and 20-25.

Claims 26-31

Claims 26-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Walker in view of Druschel. Applicants respectfully traverse this rejection.

While Applicants disagree with the grounds of rejection set forth in the Office Action, independent claim 26 has been further amended in order to expedite prosecution. For reasons similar, but not identical to those discussed above, Applicants submit that Walker and Druschel, whether taken alone or in combination, fail to teach or suggest all of the features recited in amended independent claim 26. For example, none of the applied references, including Walker and Druschel, teaches or suggests determining pair-wise probabilities for a plurality of tasks to be scheduled that each task in a plurality of tasks will influence each other task in the plurality of tasks and calculating pair-wise costs associated with the plurality of tasks from determined pair-wise probabilities for the plurality of tasks.

Walker and Druschel also fail to teach or suggest generating a total cost associated with each of the plurality of tasks to be scheduled based on the pair-wise costs for each task, wherein each task requires one or more resources, and wherein at least one of the tasks requires a plurality of resources, and wherein generating the total cost of the at least one task is based on pair-wise costs for the at least one task calculated from determined pair-wise probabilities that other tasks require one or more of the plurality of resources required by the at least one task.

Walker and Druschel also fail to teach or suggest executing a minimum total cost task including allocating resources to the minimum total cost task; scheduling the minimum total cost task if the minimum total cost task successfully executes; and reversing side-effects from the executing including deallocating resources from the minimum total cost task if the minimum total cost task fails to execute.

Even if such references could be combined, which Applicants do not admit, such combination would not teach or suggest all of the features of amended independent claim 26. Further, there is no teaching, suggestion, or motivation to modify Walker and/or Druschel to include all of the recited features of amended independent claim 26. Therefore, Applicants submit that Druschel, Sankaranarayan, and Walker, whether taken alone or in combination with each other, are insufficient to establish obviousness under § 103(a) with respect to amended independent claim 26.

For at least the foregoing reasons, Applicants submit that amended independent claim 26 is allowable and that dependent claims 27-31 are allowable by virtue of their dependency from an allowable claim, as well as on their own merits.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 103(a) rejection of claims 26 and 27-31.

Conclusion

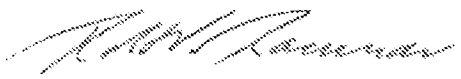
It is believed that claims 1, 3-18, and 20-31 are in condition for allowance. Accordingly, a timely Notice of Allowance to this effect is earnestly solicited.

Applicants do not otherwise concede, however, the correctness of the Office Action's rejection with respect to any of the limitations of the independent claims and dependent claims discussed above. Accordingly, Applicants hereby reserve the right to make additional arguments as may be necessary to further distinguish the claims from the cited references, taken alone or in combination, based on additional features contained in the independent or dependent claims that were not discussed above. A detailed discussion of these differences is believed to be unnecessary at this time in view of the basic differences in the independent claims pointed out above.

The Examiner is invited to contact the undersigned to discuss any matter concerning this application.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. § 1.16 or § 1.17 deposit account 50-0463.

Respectfully submitted,
KACVINSKY LLC



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Under 37 CFR 1.34(a)

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